

# RUSTEEL (Effect of corrosion on low-cycle (seismic) fatigue – Behaviour of high strength steel reinforcing bars)







Project funded by RFCS – Contract No. RFSR-CT-2009-00023	
Period:	2008 - 2012
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Position of Ferriere Nord:	Partner
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The dissipative capacity of modern reinforced concrete structures made of steel and concrete is closely related to the rotational capacity of nodes, which directly depends upon the geometrical and mechanical characteristics of sections as well as upon the ductility of steel bars (elongation and energy-dissipating capacity).

Today, the behaviour of rebars under oligocyclic fatigue is not well known and so far the European legislation has recommended any test for the characterisation of the behaviour of bars under seismic actions (LCF low-cycle fatigue tests).

The objective of RUSTEEL was to analyse the combined effect of seismic actions (behaviour under oligocyclic fatigue) and corrosion sensitivity on the behaviour of steel rebars and composite steel-concrete structures.

Numerical and experimental analyses were made on different types of steel bars (hot rolled with tempcore process, stretched, micro-allied, drawn), both corroded and non-corroded, followed by a comparison with the ductility required by seismic actions.

Specimen	Non corroded	Corroded 45 days
B400C, $\Phi 16$ , tempcore Prod. 1		
B450C, $\Phi 16$ , tempcore, Prod. 1		
B500B, $\Phi 16$ , tempcore Prod.1		

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